Hon Kevin Foley MP
Member for Port Adelaide

Government of South Australia

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Minister for Police
Minister for Emergency Services
Minister for Motor Sport
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Senator Mary Jo Fisher
Chair
Senate Environment and Communications References Committee
PO Box 6100
Parliament House
CANBERRA ACT 2600

Dear Senator

Thank you for your email of 23 March 2011 to the Minister for Police and Emergency Services, Hon Kevin Foley MP, seeking submissions in relation to the capacity of communication networks and emergency warning systems to deal with emergencies and natural disasters. As the acting Minister for Police and Emergency Services I provide the following information.

Your request has been referred to the SA Fire and Emergency Services Commission (**SAFECOM**) for a coordinated response.

In response to the terms of reference set for the Committee on which it is seeking submissions, the following information is provided for consideration:

a (i) in warning of the imminent threat of an impending emergency

The Emergency Alert (**EA**) warning system has been in operation now through two Fire Danger Seasons and has been used extensively in the recent spate of flooding in Queensland and Victoria. The system itself has proven to be reliable and recent interstate experiences have provided insight into how to optimise its future usage and minimise the impact of some of the constraints of the system. The system is also being further developed with the location based system identification of mobile phone enhancement now in the early stages of acquisition nationally. However the following considerations are of relevance to the TOR of the pending enquiry as they relate to factors that may impact on the effectiveness of the EA messages:

- the transmission of the EA warnings is entirely dependent on a functioning and effective telecommunications infrastructure across the targeted areas of the warning campaign. Should some or the entire infrastructure become unserviceable during the campaign the message delivery will be compromised.

- whilst the SMS delivery to mobile phones may be unaffected by power outages (unless those outages degrade the telecommunications network as above) the delivery of voice messages to land lines within the target area would be compromised for all households with telephones that rely on mains power.

- the telecommunications infrastructure used by the EA system is the public telecommunication infrastructure and hence is shared with all other mobile phone and land line subscribers. As a result the public load on the network is likely to be at it's greatest during periods of intense fire or flood activity and hence the available capacity to distribute the EA warning messages is reduced at those critical times potentially resulting in EA delivery delays or failures.

a. (ii) to function in a coordinated manner during an emergency,

Emergency communications have five key requirements (capacity, coverage, availability, reliability and resilience) that provide a high degree of access to communications, even when a network is experiencing high demand during an incident.

In South Australia the Government Radio Network (**SAGRN**) narrow band (P25) technology is purpose-built and effectively meets the above criteria, similar to other state owned government radio networks in Australia.

There is however, no capability for State agency emergency services radios to operate across State borders. Recently ACT emergency service deployment to assist Victoria was held up for 24 hours so compatible radios could be fitted to appliances. There should be greater consideration and priority to allow for better interfacing or sharing of Emergency Service (Public Safety) GRN's across state/territory boundaries.

Historically, commercial network providers have not been able to meet all of these criteria, or meet operational needs of the emergency services as experienced in recent events; Queensland floods, Cyclone Yasi, Black Saturday and Wangary fires.

Governance over such matters can only be dealt with through a national approach.

a (iii) to assist in recovery after an emergency.

The impact of a loss of communication networks during an emergency impact wholly on the effectiveness and quantification of recovery efforts afterwards. In fact, recovery commences before the response efforts have ended and as such the demarcation between response and recovery can become difficult to determine.

Often, one of the first things to be affected in a rural area during a fire is power and phone towers, this means that irrespective of communication network the ability for communities to receive and or make external communication is decreased or even lost entirely.

Without communication networks restored swiftly after the emergency, it is virtually impossible to know which members of a community require assistance and for recovery to commence.

There are immediate needs for affected community members to be able to communicate with their families/friends to assure them of their safety. Communication networks need to be operating to enable recovery agencies to be able to communicate back to central command areas in order to determine and facilitate the delivery of services and supplies back into the affected community. It is vital to restore communication networks in affected communities to enable affected community members to learn how, where and from whom assistance can be obtained

The prioritisation of restoration of services plays a critical role immediately after any incident for a variety of reasons and it is this prioritisation that needs to be examined by the network carriers such as Telstra. Emergency services have worked to increase the resilience of their systems significantly, however without the overall support from network carriers, these efforts can be rendered redundant, in particular with respect to providing essential community warnings and information.

In terms of the resilience of communication networks for recovery, the same points of weakness as outline in a (i) remain.

b. the impact of extended power blackouts on warning systems for state emergency services, including country fire brigades and landholders or home owners;

Many if not all of the warning systems used by Police and Emergency Services in South Australia rely heavily on electricity. While many of the systems such as the Government Radio Network (**GRN**), AlertSA and Agency Websites have backup systems to keep them running during power outages, many of these systems rely on either batteries and/or backup generators.

Generally speaking batteries, in the absence of a generator, will keep systems running for a matter of several hours (currently in SA, approx. 16 hours). While generators can extend this time, not all systems have generator back-up and even then, fuel supplies become an issue after the initial fuel supplies have been exhausted. (i.e.: 2-3 days)

The impact of extended power blackouts is not restricted to warning systems. In South Australia, agencies such as the SA Police (**SAPOL**), Country Fire Service (**CFS**), State Emergency Service (**SES**), Metropolitan Fire Service (**MFS**) and SA Ambulance Service (**SAAS**) rely on the GRN for both paging (i.e. alerting) crews to attend incidents and the voice & data networks to relay information about an incident. This information is often used in the initial stages to inform what type of advice and/or warning should be provided to the community as a result of the emergency. While back-up battery and generator systems may keep this critical information flow happening, there is no guarantee that the third party providers such as telecommunications providers and electronic media outlets have either battery backup or generator systems that will ensure that the messages released by the emergency services actually get to the community.

On the community end, warning systems such as access to websites, electronic media (i.e. ABC Radio) and phone systems (i.e. AlertSA for both fixed and mobile phones) rely on having electricity to receive the messages. While the emergency services have been advising people for many years to have a battery powered radio as part of their emergency kit, many members in the community have not considered how they will tune in to emergency broadcasts and/or receive phone messages when the power has failed. Simple things such as cordless telephones found in most homes will not work when the power is off. Other systems around the home will also often not work (i.e.: such as electrically driven garage doors) when the power is off. Also, while people may be able to access websites and receive messages via their mobile phones, that is not often the case in the area surrounding the emergency; not many people have spare batteries and/or ways of charging their phones when the power is off for an extended period.

To counter these issues, police and emergency services have committed considerable funds to provide battery backup and/or generator systems to keep critical systems running during a power outage. Having said that, not all systems (particularly on community side of this issue) have either battery backup or a generator on hand. Therefore while a short-term power blackout may not have a significant impact on warning systems, an extended blackout will often mean that warning systems will not be effective in getting essential messages to those most at risk during an emergency.

c.- the impact of emergencies and natural disaster on, and implications for, future communication technologies such as the National Broadband Network;

While it is understood that the NBN does not (is currently not intended to) specifically address 'emergency' needs, it is highly likely it will increasingly become a major source or go-to point for public sourcing information about emergencies, e.g. via the Internet and/or social media.

There needs to be analysis of the impact of and opportunities from NBN, as a means of complementing the networks/systems mentioned. Therefore, consideration needs to be given to ensuring the core back-bones of supply to high risk and regional areas are built to emergency service (high) resilience standards

d - the scope for better educating people in high-risk regions about the use of communications equipment to prepare for and respond to a potential emergency or natural disaster

South Australia has invested significantly in community preparedness for emergencies such as bushfire. As a result of the 2009 Black Saturday bushfires, funding of $ 12.9m over 4 years has been allocated to the Prepare.Act.Survive campaign incorporating media campaign and community education initiatives to better enhance community understanding of the need to both prepare and plan for bushfire.

This includes the awareness that emergency information and warnings are communicated through a suite of tools including radio, media, websites, call centres and emergency alert messages. Campaigns and community education initiatives reinforce the need to ensure that reliance on one source for emergency information and warnings must be prevented and alternate methods of receiving emergency information and warnings need to be prepared.

South Australia has an agreement in place for the broadcasting of bushfire emergency information messages by local radio such as ABC. It is therefore one of the primary communication channels that the community are asked to monitor.

However, there is an increased need in light of the recent spate of emergencies and disasters to reinforce this message that there could be failures in communication networks and that multiple information streams and communication methods should be monitored.

This self awareness dimension is a key aspect of achieving improved community resilience in the face of bushfires, floods and other natural disasters. These messages must be continually reinforced across all jurisdictions.

e – new and emerging technologies including digital spectrum that could improve preparation for, responses to, and recovery from, an emergency or natural disaster....

Nationally, Police and Emergency Service Organisations have been lobbying the Australian Government to support allocation of spectrum within the 700 MHz band to enable advanced digital mobile broadband communications, thereby facilitating the delivery of reliable data, live video, imaging, biotelemetry and data traffic etc.

Exclusive use of spectrum in this area would provide a high level of availability and potentially enough headroom for disaster response, of which is critical when large-scale disasters occur.

As is already the case in the USA, there is recognition of the vital role it will play in improving the effectiveness of emergency service communications and information sharing during emergencies.

(Note that SAPOL will be submitting a separate and more detailed briefing on this matter).

f - any other relevant matters

Social Media

Work is underway in examining the role of social media and community information flows and how South Australian emergency services can be best positioned to deliver what is undoubtedly expected by the community during an incident - timely, accurate and reliable information that guides them in making decisions and actions.

MAJOR POINTS FOR SUBMISSION

This submission recommends the following items for consideration by the Senate Environment and Communications References Committee -

- **End-to-end view/approach** -
  It is important to have an end-to-end view/assessment - not just about telecom infrastructure, but vital that it also take into account the governance, standards and processes affecting the responsibilities and practices of agencies and authorities responding to emergencies.

- **Other media channels**
  Consideration needs to be given to the relevance/importance of:

  - the media, in particular, public radio and TV
  - social media, e.g. FaceBook and Twitter

- **Network capability and resilience**
  Give greater consideration/priority to assess/provide better interfacing or sharing of Emergency Service (Public Safety) GRN's across state/territory boundaries.

  Review/ensure the resilience (and quick recovery of) core Public/Commercial communications network (telephone, internet, etc) back-bones to high risk and regional centres.

  Review/ensure the resilience (and quick recovery of power supplies) - e.g. where possible make supply power back-bones are built to high resilience standards.

- **Public Education, etc**
  Invest in public education programs that both support the community to prepare for emergencies, but also reinforce their own direct obligations/responsibilities.

- **NBN**
  Explore the impact of and opportunities from NBN, as a means of complementing the networks/systems above, including it core back-bones of supply to high risk and regional areas is built to emergency service (high) resilience standards.

  Where it is understood that the NBN does not (is currently not intended to) specifically address 'emergency' needs, but where it is highly likely it will increasingly become a major source or go-to point for public getting information on/about emergencies, e.g. via the Internet and/or social media.

- **Digital Spectrum (700Mhz)**
  Give greater consideration/priority to providing emergency service organisations/agencies across Australia priority access to (use of) sufficient segments of this radio spectrum (700 MHz).

The South Australian Police have provided a separate submission to the Federal Government in relation to digital spectrum allocation and communications networks to deal with emergencies and natural disasters.

I trust that the above information is of assistance.

Yours sincerely

Hon Bernard Finnigan MLC
A/Minister for Police
A/Minister for Emergency Services

19 April 2011